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PITTSBURGH CIVIC COMMISSION

CITY PLANNING FOR PITTSBURGH

OUTLINE AND PROCEDURE

A REPORT

BY

Bion J. Arnold, Chicago
John R. Freeman, Providence
Frederick Law Olmsted, Boston

ADOPTED BY THE COMMISSION
December 1909

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PITTSBURGH CIVIC COMMISSION.

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PURPOSE AND PROGRESS OF CITY PLANNING IN PITTSBURGH

City planning, in American cities, has been identified almost exclusively with city beautifying. City planning should be the forecasting and provision for securing such physical facilities, equipment and development of a city as are necessary to promote and accommodate the business, communication, transportation, health, comfort and pleasure of its citizens. City planning, as undertaken by the Pittsburgh Civic Commission, means, the city useful, convenient, economical and healthful, as well as the city beautiful.

The Pittsburgh Civic Commission secured this report on city planning from three of the great authorities of this country for the purpose of having for its own and the city's use a complete statement of all the factors and questions that must be studied in making such a comprehensive city plan as indicated above. By consulting this report the Commission, or any other civic body or authority, can find an outline for the necessary investigations and work connected with any feature of the physical development of Pittsburgh. In short, this report purposes to state the factors which must be considered, rather than to give the solutions of the many problems arising with the expansion and growth of this city.

The Commission will carry this work to completion so far as its own resources permit. It will gladly relinquish parts of this program in which it is not now engaged to any other civic organization or city authority which shows a determination to carry the same to completion.

Provision has been made by which several sections of the program are already under way. The city administration has been foremost in appreciating the necessity for just such investigations as the report recommends. Expert advice at this period in our civic advance is imperative if this city is to take its proper rank among American cities. Upon completion of this report Mayor Magee undertook to have studies made upon the electric and steam railroads, and requested that the Commission release to the city Mr. Bion J. Arnold for this purpose. This the Commission gladly did, and since then Mr. Arnold has been conducting these investigations for the city along the lines laid down in this report. The preparation of a building code as suggested in this report has been authorized by the city councils at the request of the Mayor, and the latter has appointed a competent building code commission, and an appropriation has been made for the carrying out of this part of the City Plan. Mayor Magee has also secured the retention of Mr. Allen Hazen of New York, who is making such a comprehensive study of an adequate sewerage system as suggested in this report. Likewise, the Mayor has plans for a similar study of the water system and requested the Commission to release to the city Mr. John R. Freeman for this purpose. It is not implied that this report was the only cause or impulse for this work, but the above statement is made as an indication of the value of co-operation and of how much of the work is already being shaped along the lines laid out by competent authority engaged by this Commission.

The Commission itself has continued the retention of Mr. Frederick Law Olmsted to make a study of a comprehensive main thoroughfare system for the center of the city and to the principal residence and manufacturing districts and the surrounding boroughs and he is co-operating with the engineers employed by the city. Mr. Olmsted will also present a most suggestive report upon the locations of the main public buildings and grounds of the down-town section. The Commission will present Mr. Olmsted's report in the near future.

PITTSBURGH CIVIC COMMISSION.

REPORT.

December 11th, 1909.

Pittsburgh Civic Commission,
Pittsburgh, Pa.

Gentlemen:

We respectfully submit herewith our recommendations as to the method of procedure which, in our opinion, it will be desirable to follow in making the investigations and studies that are necessary to enable your Commission to carry out the purpose for which it was created, so far as concerns the subject of city planning. It is our understanding that it is your purpose to inquire into the present and prospective needs and limitations of the Pittsburgh Industrial District and, in so far as its physical development can be effectively controlled by the action of the community, to discover what important practical steps can be taken, that are not now being effectively taken by the regularly constituted authorities of the district, for making that development a satisfactory and economical one.

In this report we have made an effort to subdivide the larger problem into its several constituent parts, to state briefly some of the more important questions under each subdivision and to outline the scope of the information and data which should be collected both in general and in connection with each particular branch of investigation. As the order of importance of the problems has not been determined at the present time, nor the extent of the co-operation which may be expected from existing agencies, we have not attempted to outline a suitable organization for getting this work of investigation done.

It is not the intention of this report to pass judgment upon any specific proposed improvement, but rather to furnish an analysis which will assist the Commission in proceeding to discharge the duty which rests upon it.

The lines of investigation which appear to us as the most important, after a visit to Pittsburgh and consultation with the officers of your Commission, may be classified as follows. A brief outline of the scope of investigation under the following heads is presented later:

1. Steam Railroads including the handling of local and through freight and passenger business.

2. Water Transportation including the transfer of freight to and from the boats.

3. Electric Railroads including street car system, interurban roads, rapid transit such as subways, elevated roads, etc., and the electrification of steam roads.

4. Street Systems including thoroughfares, local streets, poles, wires, lights and grade separation.

5. Public Lands and Buildings including playgrounds and public institutions.

6. Water System including water supply and distributing systems.

7. Sewerage System including collecting and disposal systems.

8. Public Control of Developments on Private Property including building code and other public police regulations.

9. Smoke Abatement including the reduction and prevention of gases and dust.

10. Legal Problems including a study of existing franchises and ordinances of the public utility

companies and a setting forth of the rights of the city for better service, maintenance of streets, compensation and future extensions.

11. Financial Problems including the raising of funds for future works of improvement.

12. Legislative Problems including the securing of necessary legislation to prevent abuses and to control service and to provide for future effective administration.

SCOPE OF INVESTIGATIONS.

In the following outlines of these problems it is our intention to confine ourselves strictly to the technical facts and conclusions involved but it is important to understand that a study of the legal, financial and legislative problems should be carried on at the same time if suggestions for improvement are to become effective.

After outlining the several problems a statement follows showing, in detail, the data which should be collected. That part of these data which is common to all the problems has been indicated separately and ordinarily these common data should be collected first.

1. STEAM RAILROADS.

A study should be made of the steam railroad facilities of the Pittsburgh district, particularly with a view to forming a reasonable forecast of what enlargements, extensions and changes in the railroad trackage may be looked forward to as necessary for securing constantly improved facilities for serving local and long distance passenger traffic and for providing the most economical and generally satisfactory means of handling in the near future a greater bulk of local and through freight than that which has caused so much congestion at busy times in the past.

This forecast is important not only as a means of enabling the citizens and municipal officers to adopt a constructive and cooperative attitude in relation to railroad improvements but because the present and expected locations and levels of the tracks and yards react in the most serious manner upon other features and aspects of city planning.

The subject is so large and any actual accomplishment is so dependent upon outside railroad interests over which Pittsburgh can exercise only a very limited influence, that work along this line must be expected to be tedious with very little results of popular interest to show for the cost during a number of years; yet it is of such fundamental importance and even in its early stages may be of so much indirect value through influencing the location and design of other improvements directly under municipal control, such as streets, bridges, flood protection works, filter plants, parks and so forth, that the citizens ought to be willing to undertake it and patiently support it.

A study of the railroad problem should develop answers to the following questions:

a. How important a part will the suburban divisions of the steam roads take in the handling of local passenger traffic between the various centers of manufacturing and of population in the Pittsburgh district?

b. Would the electrification of these suburban divisions increase the rapid transit facilities between these districts to such an extent that a density of traffic would be reached sufficient to justify electrification?

c. Should a comprehensive rapid transit system include the running of suburban or interurban trains through a downtown subway or around an elevated loop so as to reach the business district?

d. Can the present method of handling through passengers be improved, by relocating the main stations? If new locations of main terminals are desirable, should the passengers and baggage be collected and distributed wholly by means of transfers between the long distance trains and rapid transit systems or largely by means of way stations on the main lines?

e. What provision should be made for the transfer of freight between the river and the railroads, especially if a system of dikes or flood walls about the city is found desirable as a result of the investigation of the Flood Commission?

f. Can the system of local freight and package collection and distribution be improved by the use of subways, tunnels, or the present street car tracks and possible extensions?

g. In view of possible developments and increase in traffic, what provisions should be made for additions to or changes of rights of way, yards and terminal facilities?

2. WATER TRANSPORTATION AND PROTECTION AGAINST FLOODS.

Until the plans for protection against floods have been developed by the Flood Commission no final conclusions should be reached in regard to those improvements which will be affected by the methods finally adopted for controlling the rivers. If, for instance, a dike is to be built around the lower part of the city, by raising the grades of the streets along the river banks or otherwise, all of the street and transportation facilities in that district will be materially affected. Thus there should be the closest co-operation between the work of the Flood Commission and all others charged with the responsibilities of city planning so that the final programs for improvements will be consistent and comprehensive. Considerable information of value to the Flood Commission will, no doubt, be collected in connection with the study of the steam railroad and the electric railroad problems and as these plans are being developed there should be an interchange of conclusions so as to promote harmony of ideas and results.

3. ELECTRIC RAILROADS.

A thorough study should be made of the most rapid, convenient and economical methods for handling the passenger traffic throughout the District. This study should include the requirements for the immediate improvement and the future extension of the local street car service in each center of population, for convenient connections between these centers by means of interurban and suburban lines and for the ultimate development of a rapid transit system by means of subways, elevated roads or other methods.

There are a number of improvements which could be made at once, in connection with the local street car system, to which it may not be out of order to refer briefly at this time.

Most of these immediate needs and necessary improvements have been referred to in one or all of three reports which have recently been made. One of these reports is by Stone and Webster to the State Railroad Commission, another is a report by Henry C. Wright to Mayor Magee, and the last comprises the recent recommendations of the State Railroad Commissioners.

There are certain conclusions and recommendations in these reports which should receive the support of those officially interested in securing the best service with the present system. The expenditures necessary to carry out these suggestions would not be large and the results would be immediate. The effectiveness of the present system as a transportation agency can be greatly increased while the careful study is being made of future possibilities.

The improvements which should be made at once and which can probably be effected best by the city administration in co-operation with the street railway management are as follows:

1. **Regulate street traffic.** Rules patterned after the best experience of other cities should be adopted and a police traffic squad should be trained to energetically and effectively carry them out. It would seem advisable to give the street cars the right of way at certain places during the rush hour periods.

2. **Control steam road crossings.** Conferences should be held with the steam road managers and every effort should be made to reduce delays due to switching at crossings. Inspectors should be placed at the more important crossings.

3. **Maintain schedules.** Inspectors should be placed at critical points to check up delays and every effort made to insure that the street cars are run on time.

4. **Automatic electric switches.** Much time can be saved by automatic switches or by the use of switch operators at certain points instead of requiring the car operators to stop the cars in order to operate the switches.

5. **More cars and larger cars.** A systematic check should be kept upon the service on each line and a comprehensive and consistent effort should be made to reduce the crowding to a minimum. More cars and longer cars during the rush hours is the greatest immediate improvement that could be made.

6. **The heating, ventilating and lighting of the cars** should receive better attention. Pittsburgh should not be behind other cities in being provided with the ordinary comforts of street car travel.

7. **Improved rail and pavement,** particularly at critical points. The tendency of vehicles to stick to the car rails can best be discouraged by installing a

proper rail and a proper pavement, each upon a suitable foundation, and this improvement should be started at once in many parts of the downtown district.

8. **Increased clearances.** In many places where it is impossible to keep vehicles clear of the tracks on account of lack of space between the rails and curb, steps should be taken to increase the clearance by narrowing the side walks or widening the streets.

9. **Smithfield Street Bridge.** There are a number of possible ways of improving conditions over Smithfield Street Bridge. These methods should be studied and the delay to the movements of cars and vehicles at this point reduced.

10. **Grade separation.** The delays at steam road crossings to freight, trucking, street car and pedestrian traffic can best be reduced by grade separation.

It will take time and careful study to investigate and conclude upon the possibilities in Pittsburgh of "through routes", "universal transfers" and "one city, one fare'—principles which are in use in other American cities, and the "zone system" as used abroad. The question of rapid transit by means of subways, elevated railroads and electrification of steam roads should be approached with caution as its development affects all the fundamental principles of city planning. To make a comprehensive study and report upon the future development of passenger transportation facilities in the Pittsburgh district, it will be desirable to collect data as hereinafter set forth, in order to furnish a basis for answering the following questions:

1. How much better service can the Pittsburgh Railways Company afford to give at once?

2. What equipment should be provided for a service which should increase with growing demands in order to secure safety, reasonable comfort and maximum capacity?

3. What possibilities are there for through routes?

4. Will it be reasonable to expect universal transfers and one fare for the entire city?

5. What density of traffic will justify the development of a subway, elevated road or other rapid transit system?

6. What should be the policy in promoting rapid transit?—to build with private capital or city credit?—to assess the cost upon the districts benefited?—to anticipate needs and influence the character of the city's growth or to await developments and build to relieve congestion?

7. For a comprehensive rapid transit system which is better, through routes or loops? Universal five cent fare or zone system of fares? Train operation or single cars? Competition or a system of transfers between surface lines and rapid transit systems?

4. STREET SYSTEMS.

A system of main thoroughfares needs to be studied in connection with the planning of surface and rapid transit railways that will be capable of handling with convenience and economy the probable traffic demands of the future.

In planning such thoroughfares it will be necessary for the sake of economy to regard not only the principles of engineering and esthetics governing the design of streets in general and to study the complex and peculiar topography of the region, but also to consider in detail the value of existing improvements and land values which would be destroyed or damaged in the process of executing the plan; choosing carefully in each case between the acceptance of an existing thoroughfare as it is, the widening of an existing thoroughfare on one side, its widening on both sides, the connection of existing streets by the formation of connecting links, and finally the laying out of a wholly new thoroughfare in the less expensive property which is generally to be found in the spaces between existing thoroughfares of recognized importance.

Such a plan cannot be quickly prepared, nor indeed could it ever be brought to a state of final perfect completion, unless Pittsburgh should cease to grow. As long as the district grows so long will it be necessary to keep extending and revising and improving its plan of thoroughfares. But it is possible, in the course of a few years, by the application of diligent and skillful study, to get such a plan to a point well in advance of the need for immediate action in all parts of the district and thereafter without difficulty to revise it and extend it from year to year.

Although such a plan should be studied as far as possible in its entirety certain parts will necessarily be brought into a definite shape sooner than others. For example, it is clear that the opportunity for improvements in the street system in connection with the grading of the "Hump" and other items in the recently authorized bond issue should be studied at once and conclusions reached with only so much light upon their relation to probable remote improvements as can be promptly obtained. Next in order should come the study of thoroughfare improvements that may be involved with projects for rapid transit by subway or otherwise and with possible changes along the water front under consideration by the Flood Commission. Perhaps even more pressing, is the planning of a thoroughfare system for those outlying suburban districts where open country is being converted most actively into streets and lots, as it is in those localities that prompt action will secure the greatest ultimate economies in proportion to the immediate effort expended.

When we speak of a plan for thoroughfares we do not mean merely a piece of paper with lines drawn upon it. We mean a reasonable project for attaining certain definite results, including a study of the legal and financial means of bringing them about without excessive burden on the tax payers at any given time or undue hardship upon individual owners of property. The execution of such a plan must be gradual but it will not be executed at all without systematic and continuous effort and the payment of just bills for value received. Without attempting here to propose any specific method, it may be well to call attention to one successfully employed in a number of European cities for street widenings and street extensions, seldom employed in this country but involving no new or unusual legal powers and possessing many economic advantages. The layout for the widening of a given street, for example, is adopted by the city authorities as their definite and declared purpose but no legal steps are taken to dispossess any of the abutters until they severally apply for building permits for the erection of new buildings or additions within the lines of the proposed widening, at which time each of them is requested to set his building back to the adopted line and each case as it arises is settled as to damages and benefits. The most important application of the method is in the case of suburban thoroughfares where the buildings all sit back from the street line to begin with and where the physical widening of the street may not be required for many years to come but where, in the absence of some such policy occasional lot owners will from time to time build out to the line to the detriment of their neighbors for the time being and ultimately to the serious economic injury of the community, whether the buildings have to be destroyed in the widening of the street or whether the street becomes congested because the city cannot afford to widen it.

The secondary and local streets of the district, as distinguished from the main thoroughfares, also need study with a view not so much to changes in the layout of existing streets as to securing better planning in new local streets and improvements in the details of existing streets of this class. They should be considered from the point of view of traffic, of real estate development, of economy of maintenance and of influence upon the health and pleasure of the citizens; (a) with the purpose of ascertaining and pointing out in some detail what improvements are generally attainable in the methods of laying out, and in the methods of constructing and maintaining the various classes of such streets; (b) with the purpose of working out an immediate practicable program of specific improvements to be made during the next few years in the construction and maintenance of various secondary and local streets in Pittsburgh and other municipalities of the districts where such improvement is most needed and most expedient; (c) with a view to devising and bringing about the establishment of administrative machinery for the intelligent and effective control of the layout of all new streets of secondary or local character in the various municipalities of the district.

Among the subjects to be studied in connection with the design of streets, are types of pavement, location of curbs in streets of various widths, street design and location of poles and underground conduits for electrical distribution and of other underground construction.

5. PUBLIC LANDS AND BUILDINGS.

A study should be made of the situation in respect to parks, playgrounds, squares, public buildings and other public properties, with a view to formulating a reasonable, systematic policy as to the distribution thereof and a program of what can be expediently undertaken during the next few years in the way of acquisition of sites and the development thereof.

This subject may be divided into three principal groups; first, the central institutions, such as public offices, libraries, museums, central educational establishments and the like, considering the possibility of grouping them into Civic Centers; second, institutions serving local uses and therefore needing to be repeated in many localities, such as branch libraries, schools, playgrounds, gymnasiums and baths, public or quasi-public halls and social centers, local park and recreation grounds, police and fire engine houses, district offices and yards of various city departments, all these again to be considered with a view to the possibility of local civic centers; third, special institutions neither for central nor strictly local uses, such as hospitals, penal and charitable institutions, large parks, parkways, public monuments and the monumental and decorative treatment of public open spaces in connection with the general street system or otherwise.

6. WATER SYSTEM.

The water supply of each division of the Pittsburgh industrial district should be studied as to its sanitary quality, its efficiency and its reliability in quantity and pressure. Great improvements have recently been made in the supply to the main city through the building of the filtration works, the rebuilding of the principal pumping plant and the laying out of some new mains. The progressive metering of all taps recommended by the Mayor in his message of September 13, 1909 to the City Council and provided for in the recent bond authorization will doubtless greatly lessen the present waste of water in the districts thus completely metered.

But large and very important districts remain without these benefits and in some of these districts improvement is particularly urgent.

The situation is in many respects a difficult one. Some of the present sources are more or less polluted, and with the greater quantities that will be needed in various districts because of growth, the question comes as to the feasibility of supplies from more distant sources, more free from pollution than the main rivers.

The great irregularity in height of land increases the difficulty of distribution at adequate pressure for domestic service and for fire protection on the hills and pipes become inadequate as various districts become more thickly populated.

A comprehensive review of the present conditions throughout the district appears particularly important and should make plain the way to improvement on broad lines in which the smaller communities may obtain the best service and in which all portions may share in the benefits and economies of providing for the Pittsburgh district as a whole.

7. SEWERAGE SYSTEM.

A broad and careful study of the subject is rendered particularly urgent by the recent general movement throughout the country against the pollution of rivers by the discharge of raw sewage into them. In this general movement the Pennsylvania State Board of Health is taking part and has already directed the attention of the citizens of Pittsburgh to the need of improvement.

It is beyond all doubt or question feasible to make the surface and the banks of Pittsburgh rivers attractive as has been done in cities abroad, rather than to leave them unattractive. It is also feasible to dispose of the City's sewage as is being done today in several American cities which border on rivers, without undue cost. There is, however, much to be studied in drawing the line between economy and extravagance in planning the method of treatment and in carrying the purification of the effluent only as far as is really necessary. This art is yet young. Local conditions as to soil, topography and chemical characteristics of the sewage largely modify methods and it will probably be best to provide a local laboratory in charge of an expert in sanitary science to study these questions.

Great economy will doubtless result from providing main intercepting sewers and disposal works for the district as a whole and economy will compel the general separation of sewage and drainage, the sewage going through long new intercepting sewers to the disposal works while in general the storm water and street surface drainage is permitted to find its way much as at present to the river by the most direct route.

The changes from the present sewerage and drainage system thus brought about by the growth of the City and the advance in public sentiment regarding stream pollution will be of a fundamental character and will require a broad study of the entire field but may have a great influence upon the health and attractiveness of the future Pittsburgh.

8. PUBLIC CONTROL OVER DEVELOPMENTS ON PRIVATE PROPERTY.

The laws and ordinances prescribing standards of structural stability, fire risk and healthfulness for structures erected on private property are the principal means of control which the community as a whole deliberately exerts over that part of the physical city which most intimately affects the lives of all the citizens and which represents by far the greatest investment. Together with the incidence of taxation, the character of local transportation and the size and shape of blocks as determined by the street system, these laws and ordinances largely control the number, the character and the expense of the buildings which investors find inducement to erect and therefore influence directly the physical conditions under which the people work and live and the amount they have to pay for rent.

The building code of Pittsburgh is recognized to be in need of revision and upon this subject we are submitting a special report suggesting immediate action. In this place we need only emphasize the desirability of considering certain features of public control over developments on private property which are not ordinarily recognized in American building codes and which are an important part of comprehensive city planning. We refer to the requirements for the maintenance of really adequate spaces for the admission of light and air, including reasonable limitations on the height of buildings in relation to the percentage of the land occupied thereby, and to the principle of differentiating in the building regulations applied to districts between which there are marked differences in class or use, in fire risk, in economic status or otherwise.

9. SMOKE ABATEMENT.

What has already been accomplished at individual plants in Pittsburgh, Chicago, Cleveland and the results obtained in various cities abroad afford ample proof that a general improvement can be brought about in the Pittsburgh atmosphere without hampering its industrial success. Just how far the improvement can be carried in a practical way into various lines of activity and the most satisfactory appliances and most efficient means of public control are the questions now of first importance. For example recent mechanical inventions have made it a relatively simple matter to make steam boiler plants practically smoke free and certain Pittsburgh factories have their power plants already fitted with these appliances. In the case of the railroads, electric traction will in course of time doubtless supplant the steam locomotive for the district of congested traffic to well beyond the city limits. In steel and iron works many studies will need be made, comparing results obtained at progressive concerns and compelling care or better appliances at works which continue a nuisance.

The organization of a bureau of smoke abatement collateral with the police department can in the end serve to maintain a great improvement over present conditions, but in the early days or years the work must be one of friendly counsel and co-operation. An expert should study methods in Pittsburgh and in other cities, test appliances, circulate information and give advice freely. Also it may prove profitable to carry on some studies of a high scientific character upon the peculiar meteorological conditions that produce fogs in the Pittsburgh valley and the influence of the particles forming smoke upon their condensation.

There are few lines of effort that in proportion to the cost give greater promise of results in making Pittsburgh a more attractive city in which to live than earnest work on smoke abatement.

DATA REQUIRED FOR STUDIES,

I. DATA FOR MORE THAN ONE SUBJECT.

1. Population past, present and probable future, by voting districts or other minor local divisions.

2. Maps, showing distances, topography and sub-surface conditions beginning with an accurate general co-ordinate system for correlating the existing local surveys to be followed by the correction and extension of those surveys into a comprehensive map.

3. Representative land values in typical districts, past and present, showing tendencies.

4. Manufacturing sites, now occupied and available for future use.

5. Housing, showing general character of each district.

6. Taxation and revenues, showing records of past and tendencies.

II. DATA FOR STEAM RAILROAD PROBLEMS.

1. Tonnage figures—through freight, local freight, and interchange freight.

2. Passenger traffic—inward and outward bound, through and local cars and passengers.

3. Location of present yards, tracks and terminals and probable requirements for extensions.

4. Plans of the railroads and improvements and additions to existing facilities and for cut-offs around Pittsburgh city.

III. DATA FOR WATER TRANSPORTATION.

1. Data and conclusions of Flood Commission.

2. Tonnage and points of shipment and delivery of river freight.

3. Methods of handling this business.

IV. DATA FOR ELECTRIC RAILROAD PROBLEMS.

1. Flow of traffic. Inward and outward bound, by the hour, day, month and year, over each route, over each bridge, through each "throat" of the electric roads and over each suburban division of the steam roads.

2. Rates of fare now charged to reach each district.

3. Length of time required to reach each district from the business center.

4. The history of the present system showing for a period of years, passengers carried, transfers used, car miles operated, miles of track, income, rides per capita, operating expenses, depreciation, fixed charges, surplus, etc.

5. A comparison of these records with similar records of other street car systems serving cities of about the same size as Pittsburgh.

6. An estimate of the cost to reproduce the physical plant of the street car system and an estimate of the overhead development charges which should be allowed in order to determine a fair investment upon which a reasonable return should be allowed.

7. A study of the equipment as to efficiency for present needs and its value for future development.

8. A study of the economy and benefits and limitations of rapid transit lines in other cities, elevated, subway or private rights of way.

V. DATA FOR STREET SYSTEM PROBLEMS.

1. Census of vehicle traffic at important points.

2. Detailed field examination of street system, for determination of deficiencies and opportunities.

3. Location of existing poles and wires and determination of financial and operative factors properly governing the place and time of putting wires underground.

4. Data as to the underground constructions in the streets, present and prospective.

5. Data as to cost, efficiency and fitness to various uses of different types of pavement in Pittsburgh and elsewhere.

6. Methods of street laying out and of distributing the cost thereof in various cities.

VI. DATA AS TO PUBLIC LANDS AND BUILDINGS.

1. Location of all existing public and quasi-public properties.

2. Data as to building accommodations required to meet the present needs of the various public and quasi-public services; rates of growth of those requirements in the past; comparative data from other cities.

3. Detailed field study of existing conditions, needs and opportunities in respect to parks, playgrounds and other public open spaces to be carried on in connection with the study of the street system.

VII. DATA FOR WATER SYSTEM.

1. Existing water supply throughout the district, conditions as to character, extent and ownership.

2. Needs as to pressure.

3. Needs as to fire protection.

4. Possibilities of curtailing waste.

5. Present and probable future consumption, for domestic and manufacturing purposes.

6. Additional supply, sources available for future.

VIII. DATA FOR SEWERAGE SYSTEM.

1. Existing sewer system, amount of sewage and character as determined by testing plant.

2. Maximum rates of rain-fall and of run-off.

3. Extent and character of present river pollution.

4. Possible location of intercepting sewers and disposal works.

IX. DATA RELATING TO PUBLIC CONTROL OVER DEVELOPMENTS ON PRIVATE PROPERTY.

1. Review of Building Codes and Housing regulations and limitations of height, etc., in various cities.
2. Structural investigations, with a view to permitting greater economy in use of building materials.

X. DATA FOR SMOKE ABATEMENT.

1. Sources of smoke.
2. Effects of smoke.
3. Methods and results elsewhere.

The foregoing is a general outline of what we believe to be the problem involved in applying the fundamental principles of City Planning to the Pittsburgh district, and we have endeavored to arrange the subjects to be considered in such a manner as to show up systematically what is needed as a basis for dealing comprehensively with each part of the field as occasion may demand.

On account of the great variety of subjects touched upon and because your Commission may find it desirable to choose between them or to fix limitations upon the extent to which some of them should be pursued, it has seemed best not to attempt in this report a detailed statement of methods of organization for securing the data in each line or an estimate of the cost thereof, but we are prepared if requested by you to go further into details as to methods and cost in regard to any of the lines of work toward which you wish to direct your immediate attention.

Respectfully submitted,
(signed) Frederick Law Olmsted.
Bion J. Arnold.
John R. Freeman.

New York, December 11, 1909.

REPORT ON BUILDING CODE.

We beg to submit at this time, for reasons given below, a separate report upon the subject of the revision of the building code of Pittsburgh. We understand that the need for revising the present code is rather generally recognized, that requests have been made to your Commission to take the initiative in the matter and that it is properly within the scope of your Commission's functions to do so.

To prepare a good building code is a difficult and complex undertaking and it is of the utmost importance to the city that the actual responsibility for preparing it should rest upon a group of men very carefully selected. We are not in a position to advise as to the method of selection, as to whether the work should actually be done by a committee of your body or by a committee consisting of representatives of various local organizations or by a committee directly representing the municipal government, but we can properly point out some of the peculiar difficulties which must be guarded against in framing such a committee and we can make certain suggestions as to method.

The money interests involved in the decisions of the responsible committee upon many details of the building code are enormous. The effect of any building code is to increase the cost of building by compelling at least the more unscrupulous and more reckless builders to do more costly work than they otherwise would, and in the effort to prevent unsafe and unsanitary construction, the general cost of building is usually raised in many needless ways, putting a heavy burden upon the general community. It must be one of the first duties of those charged with framing a building code to save the community from the enormous waste involved in needlessly rigid requirements and in prescriptions of needlessly costly methods of consrtuction; but solicitude for this public duty and the pressure of interested parties for permission to use materials and methods that are really inferior must be resisted with absolute firmness when a certain point is reached. The determination of this in each one of thousands of cases is a matter of skilled technical investigation and of the most clear-sighted and unbiased discrimination between evidence that is competent and evidence that is dishonest or prejudiced or mistaken. But perhaps the greatest difficulties arise out of the fact that it becomes necessary to discriminate for or against the use under given circumstances of certain materials in which proprietary interests are held by concerns of large means whose money making capacity is more or less directly dependent upon such discriminations affecting either their own materials or those of their competitors. When the stake is a large one, as it not infrequently is, every sort of influence is liable to be brought to bear for controlling the decisions, from subtle personal and social suggestion to the most thorough-going and unscrupulous corruption.

It is therefore of the utmost importance that the men charged with the duty of framing a building code should be of large calibre, clear-headed, with plenty of back bone and of unquestionable honesty and fairness. Deficiencies in technical knowledge may be made good by employment of proper independent experts to supplement the sometimes biased information to be obtained by hearings; but a previous familiarity with certain aspects of the subject is, of course, a distinct advantage. It is very important that the constitution of the committee and the method in which its appointment is brought about should impress both the committee itself and the general public and the City Government with a sense of the responsibility resting on the committee, to the end that the work shall be well done and that when it is done the municipal authorities which must finally pass upon the code shall find themselves under strong moral compulsion to accept it.

As to the best basis for the consideration of the responsible committee we suggest the building code recommended by the National Board of Fire Underwriters, which has been adopted by several cities. It is our impression, however, that this code as it stands, like most building codes is so rigid in some of its requirements as to impose needless burdens of cost upon builders and hence upon the community which adopts it, and so as to hamper needlessly the development of new and improved methods of construction and the flexibility of design which is requisite to meet industrial and commercial needs. Moreover, a broader point of view than that of the Fire Underwriters would couple with the considerations of structural design and fire brick a more thoroughgoing regard for questions of health. In the matter of plumbing the current practice and the requirements of building codes are far behind the state of sanitary science and impose a serious burden of wholly needless expense upon the builders; and there is great need of the class of limitations commonly embodied in tenement house laws, including regulations governing heights of buildings and spaces to be left open for the admission of light and air.

We believe that it would be of service to Pittsburgh in dealing with the building code problem, and might be of signal service to the whole country, if your Commission could secure the co-operation of several national organizations which are directly interested in the general adoption of satisfactory and substantially uniform building codes in American cities. We suggest, therefore, that an invitation be extended to each of the national organizations named below to appoint a representative to join in a conference at Pittsburgh for the consideration of the building code recommended by the National Board of Fire Underwriters, and such modifications thereof as will permit the maximum economies in construction and the minimum flexibility of design consistent with safe and healthful building, with the immediate object of thus guiding the preparation by a local committee of a code for Pittsburgh that shall be in harmony with the best practice in the country, but largely in the hope of facilitating the general adoption of standard building requirements in American cities.

The organizations to which we suggest that invitations be sent are these: The National Board of Fire Underwriters, the American Institute of Architects, The American Society of Civil Engineers, the American Institute of Electrical Engineers, the American Society of Mechanical Engineers and the American Society for Testing materials. It would seem proper to accompany the invitation by an offer to pay the traveling expenses of the representatives of these organizations in coming to Pittsburgh and to give to each a moderate honorarium, the probable number of trips to Pittsburgh and the amount of the honorarium to be determined after the first conference.

In view of the fact that the annual convention of the American Institute of Architects occurs in Washington next week, we strongly urge that authority be secured immediately for sending such an invitation to that organization and that the invitation be sent by telegraphy if necessary, through Mr. Grosvenor Atterbury, Chairman of the Committee on Specifications, Octagon Building, Washington, D. C., who understands the situation through having had some informal talk with Mr. Olmsted, and who is prepared to urge upon the convention the acceptance of such an invitation. In order to secure action at this convention it will be necessary for the invitation to be received not later than Tuesday.

Respectfully submitted,

(Signed)

FREDERICK LAW OLMSTED,
BION J. ARNOLD,
JOHN R. FREEMAN.

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